WESTERN EDITION
OCTOBER • 1956

American Fruit Grower

Wanted: An Improved Concord Grape

4600 Growers Now Own Welch's!

Greater Yields from Grafted Grapes

• Special GRAPE Issue •

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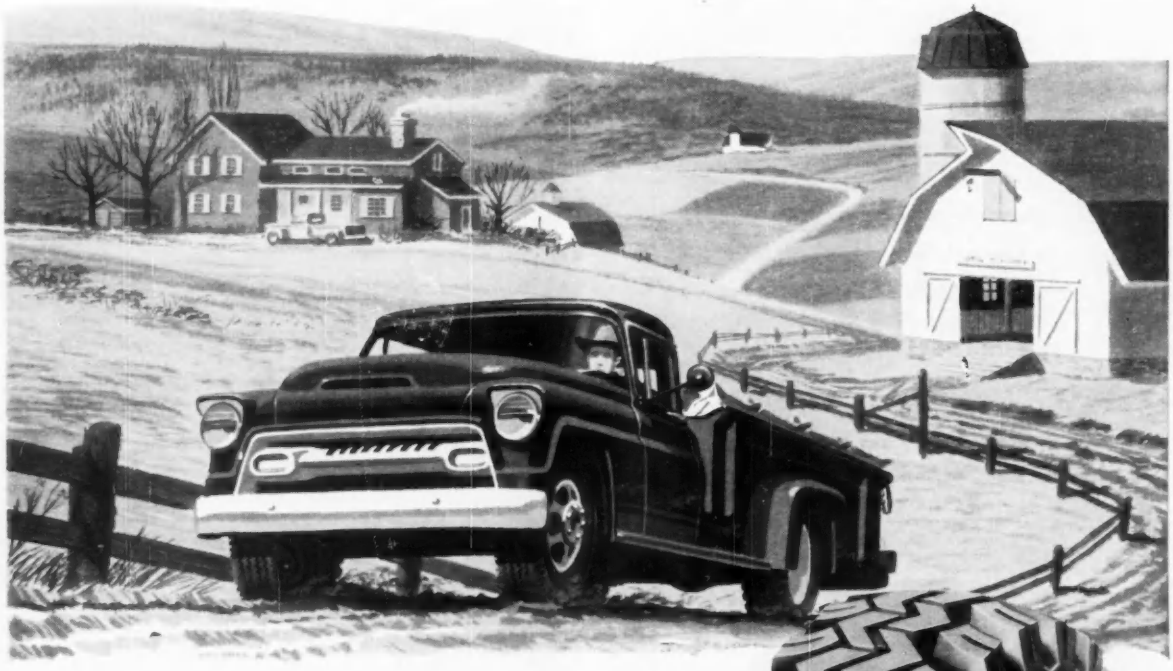

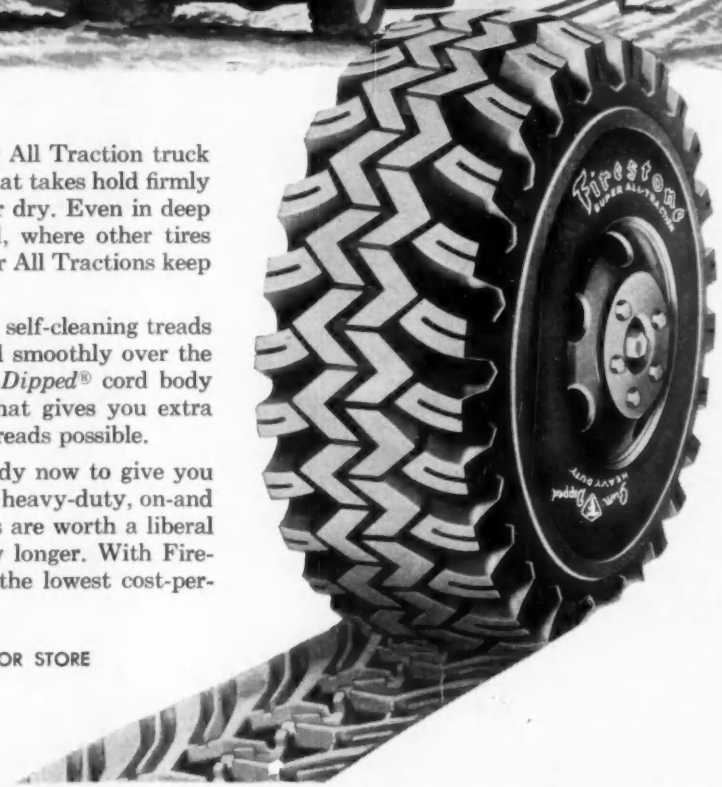

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American **Fruit Grower**

REG. U. S. PAT. OFF.

The Only National Fruit Publication

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FEATURED IN THIS ISSUE

Cover photograph of Tokay grapes growing at Lodi, San Joaquin County, Calif. A vine like this produces about 50 pounds of fruit. Old vineyards were planted with 650 vines to the acre. (USDA photo by Ackerman)

AMERICAN FRUIT GROWER

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"Eaton 2-Speed Axles Save us Labor, OUR TEMPERS AND OUR PEACHES"

... says C. H. Workman, Woodruff, S. C., peach grower

"WE'RE ALMOST READY TO ROLL," says Mr. Workman, "and will manage the orchard terraces easily—without undue strain on the engine—thanks to the Eaton low-gear range."

"ONCE WE'RE ON THE HIGHWAY," Mr. Workman continues, it's smooth, economical sailing, and with the Eaton high-gear range we save plenty of gasoline."

"PEACHES are a top-paying crop," says C. H. Workman, "but we have to step fast to keep ahead of the problems involved. Luckily, we learned how Eaton 2-Speed Axles could help us five years ago. Highly perishable, those peaches must get to market fast. An axle breakdown could be disastrous, but our Eaton-equipped GMC trucks always see us through.

"We bring tons of fertilizer into the orchard right over high-terraced embankments—and bring out heavy loads of peaches. The low-gear range of the Eaton 2-Speed Axle provides smooth, even pulling power. We can ease the load along, and that's very important because bucking would bruise the peaches. With the Eaton high-gear range, we carry full loads at top legal speeds on the highway. Round trips are quicker. And when we're picking, road time saved means extra profits.

"Economies? There's less engine wear, less fuel and oil consumption. And *no* breakdowns due to axle trouble."

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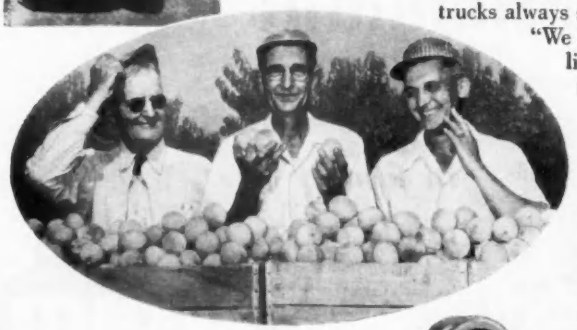

"THREE GENERATIONS OF WORKMANS all praise Eaton 2-Speed Axles," says grandfather C. H. Workman on left. Son J. V. Workman (center) and grandson B. H. Workman (right) agree.

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Sales records prove polyethylene packaging

"the best sales stimulant"

Walter Ahrens, owner of Danville Gardens, Danville, Ill., has had long experience with polyethylene. "I know nothing to equal it . . . it gives us a better looking package, permits the use of colorful advertising, encourages impulse buying, insulates the product, increases sales and is not susceptible to cracking or tearing."

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American Fruit Grower
• Fruit for Health •

Three Concord-type grapes: Concord Seedless (left); Concord; and a "giant" or tetraploid Concord mutation (right) with larger berries.

WANTED . . . A Better Concord Grape

The grape world will beat a path to the door of the man who breeds a better Concord-type grape

By JOHN EINSET
Cornell University

THE Concord grape is the only important variety in the world that is used extensively for unfermented juice, wine, concentrated juice, jellies, jams, and preserves.

The Concord, in several of the most important areas of production, matures very near the end of the growing season. The management of a vineyard to obtain high quality in unfavorable years is a major problem as yet unsolved. Also, the fact that the industry is based on a single variety results in congested picking and processing schedules, especially in heavy crop years.

Varieties having all the desirable characters of the Concord but maturing two to four weeks earlier would be valuable in ensuring good maturity in unfavorable years and in spreading the processing season.

During the past 50 years crosses have been made at the New York State Agricultural Experiment Station at Geneva and also by fruit breeders at other institutions with these objectives in view. Many early - maturing, Concord - type grapes have been introduced; none has been accepted by the industry as a wholly satisfactory substitute for Concord. Each has lacked that particular taste and aroma which would permit it to adequately supplement Concord in a processing program.

No one has yet been able to combine the desirable characters in exactly the right proportions in an early-maturing variety. One of the more widely used has been the Fredonia grape, introduced by the Geneva station in 1927. This variety, which ripens ahead of Concord, will outyield the Concord under similar growing conditions, but it fails to produce a juice of quality similar to Concord.

The breeding of new Concord-type grapes has been intensified during the past 10 years. New varieties have been tried as parents. The wild labrusca or fox grapes of New England have been also used because it is very probable that one of the parents of the Concord was such a grape.

Naturally occurring mutations or sports have been sought as improved Concords. The Concord Seedless, likely a mutation of Concord, has all the juice quality of its parent. It is a fine fruit for grape pie and other products in which the skins are to be retained but the seeds eliminated. However, the berries are small and its production is not as high or as dependable as Concord. For this reason it cannot be strongly recommended, except on a trial basis. Also, this variety may produce some seeds under certain conditions, as in 1955 in New York. We have reports that some seeds are present when it is grown in California.

There are many "giant" mutations of Concord with double the chromosome number. The berries may be double the volume of normal Concord. Trial plantings have been made, but at present we do not know whether or not these "giant" or tetraploid mutations will be of any great economic value. It is necessary

(*Continued on page* 15)

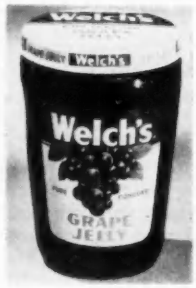
WELCH . . . 4600 GROWERS Now Own It!

The purchase of the Welch Grape Juice Company by the National Grape Co-operative Association is a milestone for all growers

By ELDON S. BANTA

Jack M. Kaplan, president of the Welch Grape Juice Co., whose interest in the growers' welfare made possible the purchase of the company by the National Grape Co-operative.

Some well-known Welch grape products: Welch's 3-bottle carrier of 4-ounce bottles (left) recording the adventures of Pow 'n' Wow and Foxy-Loxy, Welch TV stars; Welch's grape jelly and Welch's Fruit-of-the-Vine, a preserve of the whole Concord grape (below, left to right); Welch's Grapelade (jam) and Welch's frozen concentrated grape juice (bottom row, left to right).



THE National Grape Co-operative Association, Inc., on September 1, 1956, became the sole owner of The Welch Grape Juice Company, Inc. For the first time in history a group of growers, 4600 strong, has taken over the ownership and operation of a large and highly successful national business.

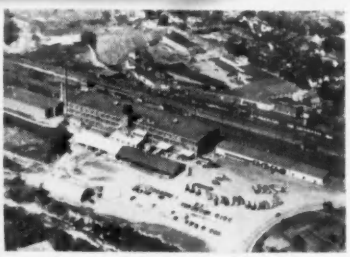
National Grape Co-operative would never have had a grape juice company to purchase if Dr. T. B. Welch had not discovered in 1869 a way to make and preserve the unfermented juice of the grape. And Dr. Welch could never have produced such a fine-quality juice if Ephraim Bull in 1849 had not first introduced the Concord variety. The American grape juice industry is built upon the Concord, and no new variety has yet displaced it.

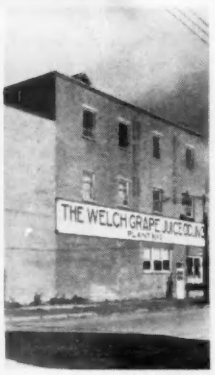
The purchase of The Welch Grape Juice Company by National Grape Co-operative presents a compelling story. It is one of hope, trust, and faith, as well as hard work, understanding, and industry.

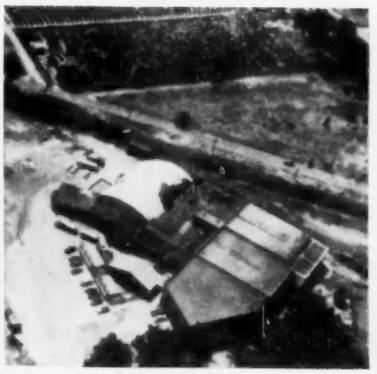
The fresh market took the bulk of the Concord grape crop before 1929, with only 30% being processed in that year. After 1930 the processed tonnage climbed while the fresh market supply shrank. By 1932 the Concord grape market was in chaos. Michigan growers were receiving only $12 per ton, and Chautauqua-Erie belt growers $15 to $18 per ton.

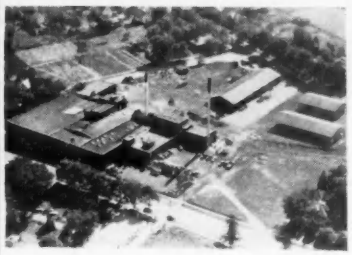
Grape prices for the next several years remained low, but the production of grape juice was expanding. Much of it was done at the expense of growers who were not receiving their fair share of the juice dollar.

To help ease their situation grape growers had formed two co-operative marketing associations by 1929. One, the Chautauqua-Erie Grape Growers Co-operative Association, Inc., with offices in Westfield, N. Y., owned a winery and juice plant in Brocton, N. Y. In November, 1933, this co-









Ten Welch plants have a processing capacity of 110,000 tons of grapes per year. On opposite page (left to right) are plants at Westfield, N.Y., Mattawan, Mich., Lawton, Mich., the general office at Westfield, N.Y., and the Springdale, Ark., plant. On this page are plants at North East, Pa. (top left), Brocton, N.Y. (left); Watkins Glen, N.Y., Kennewick, Wash., Grandview, Wash. (above, left to right).

Grower-members of the National Grape Co-operative have applauded their organization's purchase of the Welch company. Daniel H. Luce (left) grows 6½ acres of Concords at Harborcreek, Pa., is a delegate for the Pennsylvania district. Says Luce, "I'm a small grower and was formerly at the mercy of the processor. Now I can sell with confidence and security. My returns make even a small acreage profitable." Examining a fine bunch of Concords in his vineyard at North East, Pa., director H. W. Buchholz (right) says, "Grapes have always been one of our best fruit crops here at North East, and now we are sure it will be our most profitable crop for a long time to come. I believe in National and what it is doing for us grape growers."

operative sold its Brocton plant to the Chautauqua - Erie Grape Products Corporation, a company formed by J. M. Kaplan of New York City.

To supply his plant Kaplan purchased Concord grapes through the co-operative from whom he had purchased the processing plants. The key to the chain of events that followed was the fine working relationship between the growers, their co-operative, and Kaplan.

By 1939 Kaplan had closed his winery, expanded his juice plant, and changed the name of his company to that of National Grape Corporation. Through efficiency in his plant and more aggressive marketing methods Kaplan was able to increase prices to growers and restore some confidence in the grape growing business. By 1942 Concord growers received up to $63 per ton for juice grapes when about 98% of the crop was going to juice.

Ceiling prices applied to grapes and juice during the war put private processors at a disadvantage, since they could not compete with the prices co-operatives were able to earn for their members. Consequently growers supplying National Grape Corporation grew uneasy with the situation and turned their attention to forming a co-operative to improve their marketing situation.

The result of this grower interest was the formation of the National Grape Co-operative Association, Inc., in March, 1945. The objective of this grower co-operative was the purchase of Kaplan's National Grape Corporation plant and business at Brocton. A plan to accomplish this was formulated in April, 1945. National Grape Co-operative would receive all the net proceeds of the business and out of this would pay National Grape Corporation 25 cents a case for all juice sold for a 10-year period. At the end of this period the plant would belong to the growers.

But a bigger transaction came into view. In June, 1945, Kaplan was offered a major stock interest in The Welch Grape Juice Company. He discussed the possibilities with the National Grape Co-operative Association. Directors and Concord growers in the Chautauqua-Erie belt urged Kaplan to proceed with the purchase of the Welch stock.

After completing his purchase and assuming management of The Welch Company, Kaplan worked out with directors of National Grape Co-operative a profit-sharing contract.

Membership in the National Grape Co-operative was offered to all growers who had been delivering grapes to Welch plants in the Chautauqua-Erie area. Growers were quick to realize the tremendous advantage they would have in sharing in such a large juice business. They took out membership by the hundreds. Concord growers in other states later became members.

Under the profit-sharing arrangement The Welch Company agreed to turn over to the growers in payment for grapes purchased, the price of the finished product sold, less costs of operation and 10% of net sales. The latter was the only compensation The Welch Company retained out of the business.

This plan worked fine for both the company and the growers. Welch improved processing plants, expanded business, and engaged in heavy sales promotion of its products. This meant increased returns to growers because every dollar saved in plant efficiency and every dollar earned from new sales meant bigger profits for the growers themselves.

But the time came when growers wondered what would happen if this happy arrangement of profit-sharing should end before purchase was completed. Their best recourse was to buy outright The Welch Company and its business as quickly as possible.

In May, 1949, directors of National Grape Co-operative went to Kaplan

(*Continued on page* 17)

Grape rows are kept free of weeds and grass and mostly level in Peter Rudell's high-producing Concord vineyard at Berrien Springs, Michigan.

Ed Beers, Glenmora, N.Y., draws wires of grape trellis through holes in end posts and secures them to hand cranks made of bent iron rods. When crank is twisted to one side, wire is tightened.

They Are Using NEW CULTURAL IDEAS

Aggressive eastern growers by modern cultural practices are boosting yields and shooting for highest-quality grape.

AVERAGE yields of American bunch-type grapes as grown east of the Mississippi River range between 2 and 3 tons per acre. Yet we know growers who consistently beat this average many times over. Experimental results and grower experiences from New York to Iowa show clearly that if improved practices are followed, most growers can double or triple this average tonnage, and do it quite profitably.

Established vineyards that are planted on suitable soils and sites and have around 64 square feet of land per vine (as set 8 x 8 feet) can be made to produce upwards of 6 tons of grapes per acre.

Don J. Wickham and sons, William and David, of Hector, N. Y., have yields of Concords going up to 6½ tons per acre, with the average running a good 4½ tons, in their 55-acre vineyard along the eastern shore of Seneca Lake. During the past 10 years the Wickhams have boosted yields 40% through improved fertilizer practices, the use of the high trellis, and the application of balanced pruning.

Improved yields have followed the change from muriate of potash to sulfate of potash in the fertilizer program. The sulfate of potash is applied at rates varying from 300 to 500 pounds per acre, depending upon soil type and extent of deficiency of the element potassium. The heavier rates are applied to the fine-textured soils and lighter rates to coarse-textured soils.

Nitrogen produces lots of vigorous canes necessary for high yields. In the Wickham vineyards annual applications of actual nitrogen range between 60 and 90 pounds per acre, depending upon the vigor of the vines. Up to 300 pounds per acre of ammonium nitrate (33⅓% nitrogen) is applied in the spring as the cover crop of wheat is being plowed under. Care must be exercised with nitrogen to keep it in balance with other elements and cane growth.

Across the lake from Wickhams' farm lies the vineyard of Ed Beers at his Spring Ledge Farm. Seven years ago Ed followed results of research by New York grape specialist Nelson Shaulis and began sowing his cover crop late in the fall. Over the years this month's delay in seeding has added from 1 to 2 tons in Ed's grape yields, as it has in many New York vineyards. The vineyard is kept clean until mid-September, then disked and seeded to a rye grass cover crop. Formerly it was sown in August.

After seeding the rye grass, the vineyard is mulched with straw. Bales are placed down the row, then spread by driving over them with a 6-foot New Idea stalk and brush shredder. It does a neat, quick, and easy job of spreading the mulch. Mulch adds needed organic matter and conserves some moisture, thus improving yields.

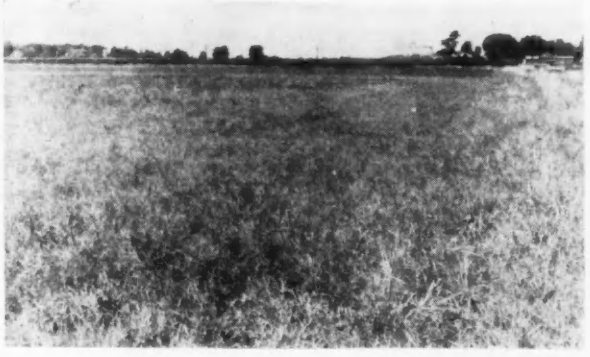
With the help of Shaulis at the New York Experiment Station, Ed discovered manganese deficiency in his vineyard. When needed, he corrects this with a spray of 6 pounds of manganese sulfate and 3 pounds of hydrated lime per 100 gallons of water. This correction has pushed yields up a little more.

Like the Wickhams, Ed fertilizes

Left — Grapevine trained to Umbrella Kniffin system on 5½-foot trellis. Canes are bent sharply over top wire and tied to lower wire. This system makes for high yields of quality grapes.

Below—Pruner is removing canes over ¼ inch in diameter, as large canes will be unproductive.

Manure spreader applied this hay mulch in vineyard of Stewart Christy, Jr., Fredonia, N.Y. He used a forage harvester to harvest hay green, blew it into manure spreader with 6-foot sides.



Alfalfa, rye grass, and timothy is Christy's favorite mixture for mulch. This 24-acre field on his farm is nearly ready for the second cutting with the forage harvester. The first cutting gave enough mulch for 27 acres of grapes, spread at the rate of 4 manure spreader loads per acre.

with sulfate of potash instead of muriate. He keeps up vine vigor by applying around 150 pounds of ammonium nitrate per acre in May as he works in his winter cover crop of rye grass. Careful fertilization practices have added up to 2 tons more grapes per acre than those of a decade ago.

In the Beers vineyard Concords are trained to the Umbrella Kniffin system on 5½-foot trellises, and Catawbas to the Keuka system. The high trellis system in New York tests has given consistently greater yields than the normal 4½-foot trellis. With only the additional cost of about $20 per acre for the 8-foot posts, the practice has been quite profitable. Posts last up to 10 years. In other tests, the Umbrella Kniffin system of vine training has outyielded any other system. Together, these two practices can add up to a ton more to grape yields.

Beers and the Wickhams have found the practice of balanced pruning quite profitable. In balanced pruning the greater the vigor, the heavier the pruning, but the greater the number of buds left per vine.

In practice it works like this, especially for Concord and Delaware varieties. For the first pound of one-year wood prunings 30 buds are left per vine. Then for each additional pound of prunings 10 more buds are left. Thus, a vine with 3 or 4 pounds of prunings would have 50 or 60 buds, while a vine with 1 pound of prunings would have about 30 buds.

Care is taken in these high-producing vineyards to select only the best canes for fruiting during the pruning operation. The most productive buds are found on canes ¼-inch in diameter or slightly larger. Also, buds are more productive on canes with the internode length between the fifth and sixth buds ranging between 5 and 8 inches.

Peter Rudell, of Berrien Springs, Mich., grows such vigorous vines that he can leave 75 to 80 buds per vine. Yields of Concords go up to 9 tons per acre with an average of 6 to 7 tons. Bunches may weigh up to one-half pound, but average one-fifth pound each.

From a small planting of the variety Niagara he has cut as high as 12 tons per acre. Balanced pruning is one of the practices that has helped him achieve record yields.

Another factor in pushing up profitable yields in the Rudell vineyard is careful control of fertilization. He has worked closely with Michigan State University on fertility control and is having leaf analyses made.

This close check caused Rudell to change from a 5-20-20 fertilizer to a 6-24-12. He found his vineyard high in potash, but most Michigan vineyards need additional potash. He puts fertilizer on by mid-March, then supplements it later with 100 pounds of ammonium nitrate where vines are a little low in vigor. Rudell balances his fertilization as well as his pruning to gain high yields.

Weeds and grass have to be kept from the grape row if highest yields are to be obtained. For years the grape hoe has been the tool for accomplishing this. Now it appears that chemical weed control may take over in the future, and do the job more

(*Continued on page* 20)

Barry variety of grape on Constantia rootstock at five years of age yielded 18 pounds. Productiveness is increased, and though Barry has recurved stamens, it is more self-fruitful when grafted than when grown on its own roots. Pollen seems to be more virile.

GREATER YIELDS from *Grafted* Grapes

American grapes grafted on superior rootstocks give higher yields than grapes grown on own roots

By PAUL H. SHEPARD

Missouri State Fruit Experiment Station

SINCE the 1920's, experiment stations have been grafting Concord and other American grape varieties on various rootstocks. Time and again these trials have resulted in a distinct gain in grape tonnage over the vines grown on their own roots.

Probably most commercial grape vineyards in California are made up of grafted vines, planted because of the presence of phylloxera, a small insect that attacks the roots. Certain rootstocks were found to be immune to phylloxera, and therefore supported a more vigorous-growing variety on top.

Phylloxera has been found in practically all localities in the United States where grapes grow, but in many instances it attacks only the leaves on certain varieties, doing little harm. Phylloxera feeding on grape roots has definitely been found in New York and other eastern states.

Here at our experiment station at Mountain Grove, Mo., we have been unable to find the insect in our soil. Perhaps we have not searched in the right places; however, we are able to greatly increase the yield of many varieties of grapes by grafting them on the roots of vigorous native species.

In 1930, we tried 23 different varieties of rootstocks on Concord, Campbell, Moore, and Delaware. Three stocks were universally good on all the varieties. They were U.S. 3309, U.S. 125-1, and Constantia. The extent of the increase over a seven-year period was as follows:

The best rootstocks for Campbell Early increased the production five times over the production when grown on its own roots; the prunings removed increased it nearly six times.

Moore Early doubled in fruit and produced 2⅓ times the amount of wood growth.

Concord and Delaware gave 1½ times the fruit. The increase in pruning wood was 2½ times for Delaware and 1½ times for Concord.

During the past 10 years we have used (in addition to the three successful varieties mentioned above) some new native species as rootstocks. They were vigorous, wild varieties of Cineria, Aestivalis, and Cordifolia, found in the Ozark hills. We have used them on many additional varieties. In about four times out of five we increased the grape and wood production of the grafted vine.

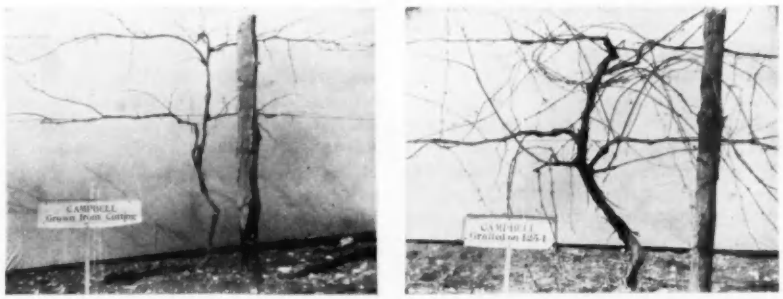
Some of our finest varieties of grapes, the Rogers crosses for instance, have recurved stamens, making it necessary for them to receive pollen from other varieties in order to set fruit.

When we used Lindley, Barry, Herbert, and Merrimac on our better rootstocks, we increased their productiveness. In addition we found the grape flowers more self-fruitful. The bloom still has a recurved stamen, but bagged bud-clusters produce a much greater number of berries than bagged clusters on vines growing on their own roots. The pollen on the recurved stamens seems to be more virile, probably in accordance with the general increased vigor of the vine.

The flower of Campbell Early has upright stamens and the bloom has always been described as self-fruitful, but when grown on its own root in Missouri, it makes a poorly pollinized, stringy cluster. Grafted on the best rootstocks, it makes a large, compact cluster. In most every case where the stock and scion were compatible (meaning they quickly grew together all the way around) the vigor and production were increased.

Regardless of what causes grafted grapes to produce higher yields, it seems reasonable to assume that the time will come when most fruit nurseries will propagate, and growers will buy, grafted vines. Over a 10-year period, the extra cost of grafted vines the first year is just a small drop in the bucket. THE END.

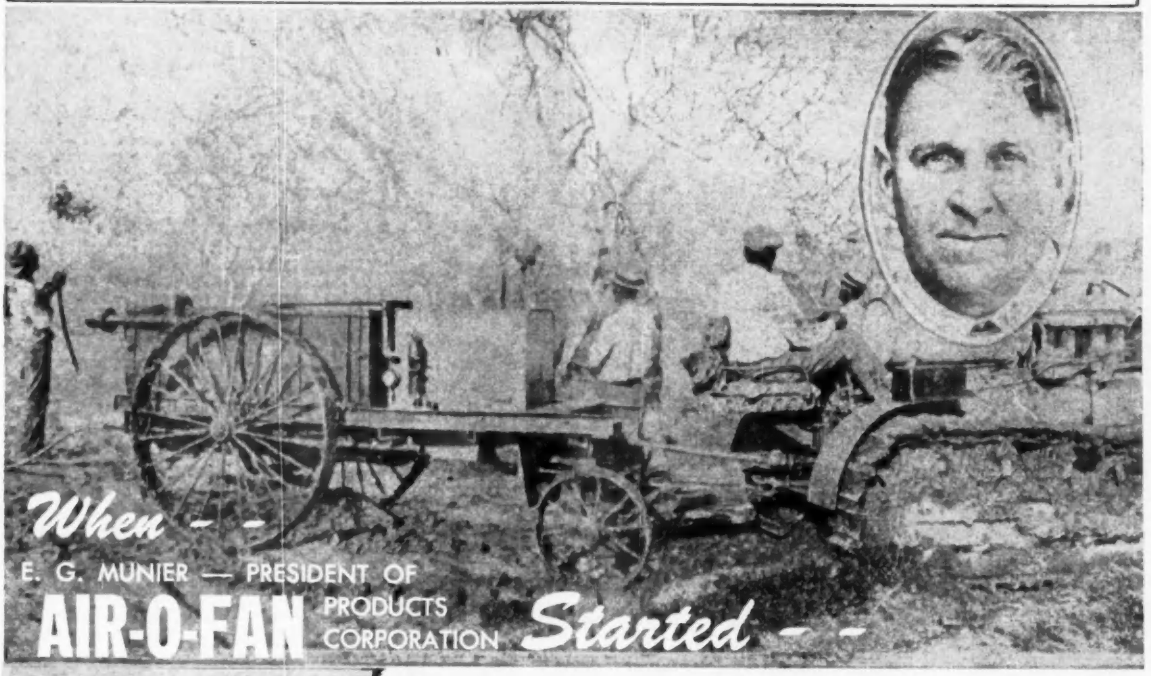
The Foster Nursery and the Rynalski Nursery, both of Fredonia, N.Y., are suppliers of grafted Concord vines, but the supply cannot meet the demand. The New York State Fruit Testing Association, Geneva, N.Y., is starting to produce grafted varieties of some varieties other than Concord and will probably have a limited number for sale after the 1956 growing season. The limiting factor in the production of grafted grapevines is the supply of desirable rootstock. Consequently, the price is almost twice that of a vine on its own roots.



Two seven-year-old Campbell Early vines grown on same soil 10 feet apart. Vine at left, on its own roots, produced 21 clusters weighing 3¼ pounds. Average cluster weighed 2½ ounces, largest weighed 4 ounces. Grafted vine on U.S. 125-1 rootstock (right) produced 58 clusters weighing 26¼ pounds. Average cluster weighed 7½ ounces, 10 largest weighed in at 9 pounds.

TRACTOR GIVES POWER TO SPRAYER

E. G. Munier of the Figarden district near Fresno, adopted the very latest development in spraying when he decided to have the power for his spraying rig transmitted from the tractor which pulls the machine. Instead of having a separate engine to operate the rig, Munier acquired a power take-off attachment which transmits the power from the tractor to the spraying rig. He has found that the power from the tractor furnishes a steadier and more forceful pressure to shoot the spraying material into the vines and high up into the trees. Munier is shown in the oval.

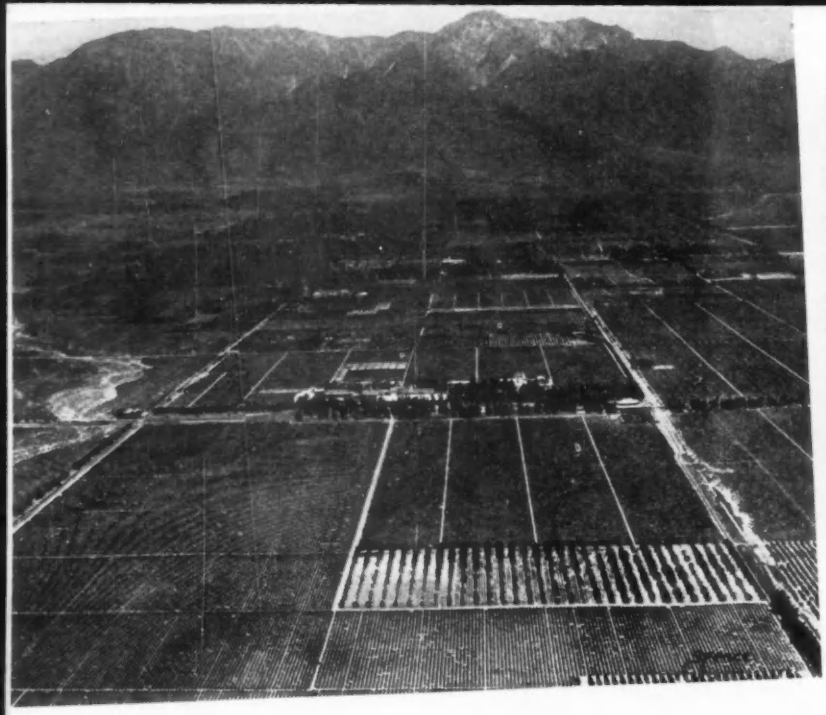


NEW INVENTION BOOSTS PRESSURE OF SPRAYING RIG

Steady, high pressure is the greatest desire of the San Joaquin Valley rancher when he starts spraying his vines and fruit trees in the Spring of the year. E. G. Munier, prominent Fresno orchardist, whose fi... plants, fi...

thus eliminating having a separate the machine time furnishing steadier pr... of the spr... Munier proved thirty acr... and thirty two days the new ... siderable ... leaders ... who ar... of con... menag... San ...

SEND NOW FOR NEW BROCHURES



Big vineyards are the rule in California. At left is an extensive planting of wine grapes in San Bernardino County in the hot desert region east of Los Angeles. Above—Trays of raisins drying in the sun are a common sight during harvest season in the Central Valley.

Land of the Big Vineyards

This is the story of how George Hunt grows raisins in the Central Valley. His story is a typical one in California

By RAYMOND COPPOCK

EIGHTY-EIGHT acres of vigorous Thompson Seedless grapes on the sandy soil near Livingston, Merced County, in the heart of California's fabulous Central Valley are the basis on which George Hunt predicts a prosperous future.

Elsewhere in the state, famous table and wine grapes are grown. But for Hunt and hundreds of other grape growers in the southern end of the Valley, the profitable and challenging market is raisins.

Central Valley raisin grower George Hunt shows the size of the clusters of his Thompson Seedless grapes. Thinning is done entirely by pruning. He gets 2 tons of dried raisins per acre.

Grape growing, like any other kind of farming, means taking a chance each year, Hunt admits. For one thing, there is the weather: the entire raisin crop depends on a few hot, dry weeks in the fall to suck the moisture from the grapes as they lay on trays between the rows. The market, despite the effective efforts of the advisory board to prevent a collapse each year, still is plagued with an annual surplus. Grape growers, too, have their problems with disease, farm labor—even taxes.

Yet Hunt is convinced that the combination of good soil, plenty of water, and efficient management means reliable profits over the long run. He aims for, and generally makes, 2 tons of raisins per acre (dry weight: 1 ton dried is the equivalent of 4 tons fresh weight). His costs come to about $110 per acre. And for the past five years, raisin prices have fluctuated between $140 and $180 per ton (dry weight).

For Hunt, the year's operations start with pruning in December and January when Valley grape growers hope for a few frosty nights to insure dormancy of the vines. There is no concern that vines may be injured, since temperatures never drop to zero in this area. The worry about frost damage starts later, when buds begin to show green.

"We prune to get a mediocre-sized crop and then work for quality in the fruit," says Hunt. Canes are trained chest-high if possible to avoid the danger of low temperatures close to the ground.

By the middle of March, winter weeds are a foot or more high and Hunt goes through the vineyard with a French plow which reaches in between the vines to turn the grasses under. Growth between the rows is simply disked under and appreciated as a cover crop. Weeds which escape this operation are attacked by hand later.

As soon as the implements are out of the field, their irrigation system is turned on, and until May 1, Hunt strives to keep his vineyard soil soaked. The purpose is not irrigation but frost protection; growers in this area realize that wet ground more readily transmits heat from the soil upward during the cold mornings when tender, young shoots are threatened by frost.

As leaves and berries form with the advent of warmer weather, the fertilizer which was applied in midwinter —60 pounds of actual nitrogen per acre in the form of ammonium sulfate —begins to pay off. Leaf growth be-

comes lush and thick, so that Hunt has had only minor damage from sunburn during early hot spells which can seriously damage the crop.

As the weather warms up, the second irrigation starts. Like most grape growers in the Valley who use irrigation (many vineyards in California, including some in Hunt's neighborhood, are never irrigated), Hunt waters three times a year including the first soaking for frost protection. He times his final irrigation no later than August 10 so the soil will be hot and dry when the crop is laid down to dry.

Instead of soaking every row in turn, Hunt sends water down every other row and then promptly comes back across the field in the alternate rows.

"We think this keeps the ground more consistently moist under the vines," he says.

Two miles of underground concrete pipe, which cost an estimated $12,000, make this operation easier. Judging from increased yields after the pipe was installed in the postwar years, Hunt is certain that the underground system already has paid for itself.

Meanwhile, he sulfurs the vineyard regularly four times a year—for both mildew and mites—and keeps a close watch for leafhoppers which are dosed with DDT immediately after being detected.

Harvesting is an operation which he makes brief by hiring as many as 100 pickers for about four days. His deadline is September 10, although he has reluctantly waited three or four more days on occasion. By that time

(Continued on next page)

Jess Dominguez, whom Hunt calls "the most important link in my operation," shows the weed cutter used after French plowing in the vineyard. The blade can be set as deep as 6 inches below ground level. Trip lever in foreground strikes vines and permits blade to swing out and around.

VINEYARDS

(Continued from preceding page)

he hopes for 22% sugar or more if possible. A member of the Sun-Maid Raisin Growers Co-operative, Hunt is paid a bonus for extra quality, which in raisins means extra sugar. He is convinced that the industry in general should do the same.

"Too many growers try for quantity instead of quality—if they were paid more for high quality they couldn't afford to grow anything else. And poor quality affects the entire raisin retail market," he says.

The raisins are dried on trays between the rows. Before picking, Hunt runs a special scraper blade between his rows and slopes the ground a few degrees to the south. Since the rows run east and west, during the period of drying the sun strikes the fruit at almost right angles from 10 a.m. to 3 p.m. Sloping the ground takes four or five days off the drying time.

A few days before the drying is completed, the bunches are turned, a hand job. At completion they are packed solidly in wooden boxes holding about 50 pounds each and left in the field to "sweat"—that is, to distribute the remaining moisture evenly through the mass of fruit. Maximum moisture when the raisins are hauled to the packing shed is 16%.

Only after delivery is complete can raisin growers relax and look forward to payment, which may not be complete for a year or so as the advisory board carefully disposes of that part of the crop officially declared surplus. In recent years the surplus has been between 16 and 22% of the crop.

Such a surplus, Hunt admits, is not good—and yet the raisin industry, in a self-help program, has prevented the disaster which seemed inevitable after the war when plantings of grapes boomed.

By carefully predicting the size of the crop and estimating the surplus, the advisory board, says Hunt, "helps hold the market stable, with no demoralization when the crop comes in once a year."

And he believes that a stable market plus good farming is enough to insure a satisfactory future for the raisin grower. THE END.

THE CALIFORNIA GRAPE INDUSTRY

More than 90% of the grapes marketed in the United States come from California. Last year the state produced a bumper crop of 3 million tons; in 1953 and 1954 the crop was around 2½ million tons. Yields in 1955 averaged 7.1 tons per bearing acre, and growers' returns averaged $38.60 a ton (fresh farm weight), or $275 an acre.

California grapes are mostly of the European species requiring long, warm to hot, dry summers for their best development. Daily mean temperatures of 65° F. are necessary for most varieties, and some need higher temperatures of 75° to 80° F.

The crop is divided into three kinds of grapes: raisin, table, and wine. This is largely a varietal classification and does not jibe with the utilization of the crop except in the case of wine varieties, which are used exclusively for wine and brandy. Most raisin varieties may be utilized for wine and table use as well as dried as raisins, and table varieties may be used also for wine, brandy, or juice.

Raisin varieties comprised a little more than half of the 1955 crop, or 56%. Table varieties made up 23% and wine varieties 19%.

The big variety in California is the Thompson Seedless, a raisin type. In 1953 around 40% of the state's total grape acreage of 464,031 acres was planted to this variety, and new plantings of Thompson since then have almost certainly increased this percentage.

Biggest production area is the fabulous Central Valley, with 80% of the acreage.

With mechanical grape harvester developed by University of California one man may harvest 100 tons a day! Tractor-mounted machine has a hydraulic, adjustable-height cutter bar at rear.

TRELLISING IN MICHIGAN

An 85-year-old grower recalls changes in trellising grapes

By JERRY MANDIGO

District Horticultural Agent, Paw Paw, Mich.

CHARLES Stainton, of Lawton, Mich., is 85 years old and owns a block of grapes that has been in production at least 80 years. Charlie has taken an active part in grape production ever since he was a small boy and has a vivid memory of early trellising problems.

He recalls that in the 1870's grapes were planted in rows 8 feet apart and the plants were spaced 10 feet in the row. The trellis consisted of a white oak stake driven in the ground near each plant. These stakes only lasted a few years before they weakened, so that a heavy crop and wind invariably broke them.

End of the Fence Rail

His next attempt was a wire trellis using white oak fence rails. These rails were tall when set in the ground and he still had the 8-foot spacing between rows. Just before harvest a heavy wind and rain broke the entire vineyard trellis down as if they had been matchsticks. This experience ended the era of fence rail trellising.

Reposting wasn't the problem it would be now as the largest vineyard in Michigan was 2 acres in size.

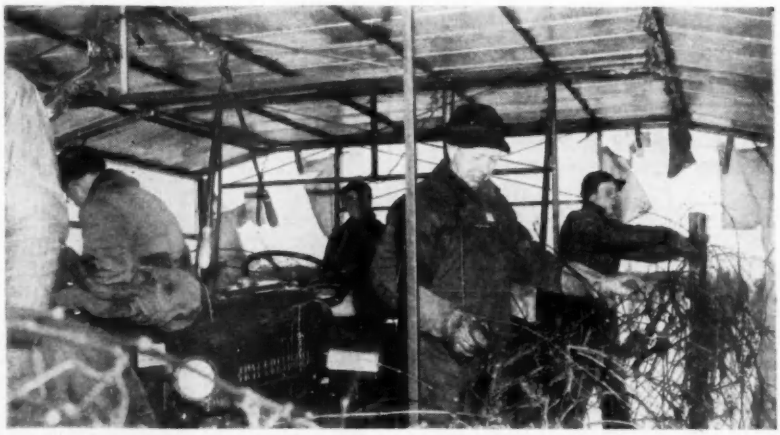
The next change was to a 10-foot spacing between rows with 8 feet between plants in a row. This spacing proved convenient to work and produced satisfactory yields. It is now used almost exclusively in the Michigan grape belt.

The next post to be used after the rail fence episode was locally-cut white cedar. It proved so satisfactory that the local supply was soon exhausted. Northern Michigan-grown white cedar was then brought down and that continues to be the chief source and kind of vineyard post used today.

The first cutting of white cedar for posts had a large center of heart wood and lasted a long time. The second cutting grew rapidly from the old roots, so was mostly sap wood. This sap wood was short-lived so Michigan grape growers soon became interested in using some sort of a wood preservative.

About 1921 Carl Buskirk, of Paw Paw, started treating some sawed white oak posts with gas house tar. These posts if untreated would normally last ten years. A few of the tar-

(*Continued on page* 21)



Everything's cozy inside 6-passenger pruning trailer. Heat from motor keeps workers' hands warm. Tractor is steered by hydraulic motor operated by valve, moves 2 or 3 feet per minute.

PRUNING TRAILER Keeps Them Warm!

By ROBERT DYMENT

COLD weather is no hindrance to grape pruning in the vineyards of John Archer, at North East, Pa.

Archer is the largest grower for Welch grapes in his area, and one of the largest grape growers in the East. He knows the importance of keeping his workers happy, and reports that his men quickly "warmed up" to the idea of a combination pruning trailer-shelter house.

The device consists of an International Model 300 tractor with platforms on either side and a tent-like cover which extends over two rows of grapes. The adjustable platforms are 17 feet long and carry three men on each side. A six-man crew can thus trim two rows at a time as the trailer moves slowly down the rows.

The shelter consists of a canvas canopy, Plexiglas windows, and a metal roofing. Angle irons are used for the frame to assure steadiness.

The tractor has a special transmission allowing it to move at a slow idling speed of 2 or 3 feet a minute. A hydraulic motor regulates the steering mechanism so that no tractor driver is needed. A valve at the front of the platform operates the steering mechanism. If the tractor gets off its course, the man working nearest the valve simply turns it to the right or left.

Should the machine hit a grape post or heavy root, the motor automatically stops and no damage can result.

At idling speed the motor generates enough heat to warm the workers' hands, and the sound of the motor is barely audible. To relieve the normal monotony of pruning grapes, Archer installed a radio in the trailer.

The pruning trailer cost about $700 to build. Ed Little, Jr., a machinist in Ripley, N.Y., helped Archer develop it. THE END.

John Archer shows his pruning trailer to Forest Hopkins (right), editor of the local paper.

CONCORD

(*Continued from page 7*)

to make strict comparisons of chemical composition and vineyard performance of any mutation before its true value can be assessed.

We might attempt to speed up the rate of mutation which is occurring in nature. It is possible that this may be done by various types of radiation and chemical treatments. In co-operation with Brookhaven National Laboratory at Upton, N.Y., we have exposed several thousand Concord vines to X-rays, gamma rays from a cobalt 60 source, and thermal neutrons. Most of the induced mutations will likely be similar to those occurring spontaneously. THE END.

FATHER OF THE CONCORD

A name famous in the annals of American grape history is that of Ephraim Wales Bull (above), who fruited the first Concord grape in 1849. The original grapevine is still bearing at Concord, Mass., where Bull was born in 1805 and lived a quiet, useful life until his death 90 years later.

As the story goes, in 1840 some boys brought wild grapes growing along the river and scattered them along the fence of Bull's property. Several seedlings resulted which caught his eye, and he planted seeds from one of these Labrusca vines in his garden. Growing near-by was at least another grape, the Catawba, and the wild vine was open to cross-pollination. It bore fruit in 1849, and he named it Concord.

Exhibited before the Massachusetts Horticultural Society in 1852, the Concord grape won immediate acclaim. Hovey & Co., of Boston, introduced it in 1854, and within a year it was being planted halfway across the country. In 1865 it was awarded a prize by the American Institute known as the Greeley prize, from its donor, Horace Greeley, who hailed it as "the grape for the millions."

Photo courtesy United Fruit Company

Ephraim Bull's original Concord grapevine at Concord, Mass. — still bearing fruit.

CALENDAR OF COMING MEETINGS & EXHIBITS

Oct. 12-13—Second annual West Virginia Black Walnut Festival, Spencer.—Herb Riggle, County Agent, Spencer.

Oct. 21-23—American Horticultral Council 11th annual congress and annual meeting, Michigan State University, East Lansing. AHC Headquarters: 30 Rockefeller Plaza, New York 20.

Oct. 25-Nov. 3—National Apple Week.—Norbert Eschmeyer, 1302 18th St., N.W., Washington 6, D.C. Write for display materials.

ON DISPLAYING THE GOODS

"Remember Sally Rand? She was making a million while thousands of unimaginative bump-and-grind artists were starving. And it wasn't because they didn't have the goods—they just didn't know how to display them.

"The modern-day woman knows all about displaying, and all of us men fall for it! The woman that won't pad a little here, strap down a little there, shape up or down and paint and powder in various other places just isn't in the running.

"And believe me, in this age of the 'big show' for the customer, everything I have said can be applied to the sale of produce in general, and apples in particular."—*E. Richard Manzano, telling members attending the 62nd annual convention of the International Apple Association at Atlanta, Ga., about IAA plans for National Apple Week October 25 to November 3.*

Oct. 29-30—Minnesota Fruit Growers Association and Wisconsin State Horticultural Society western section convention, Winona Hotel, Winona, Minn.—H. J. Rahmlow, Sec'y, U. of Wisconsin, Madison 6.

Nov. 1-2—Western Growers Association annual convention, Sheraton-Palace Hotel, San Francisco, Calif.—Headquarters, 606 S. Hill St., Los Angeles 14.

Nov. 7-8 Wisconsin State Horticultural Society and Wisconsin Apple Institute joint annual convention, Retlaw Hotel, Fond du Lac.—H. J. Rahmlow, Sec'y, U. of Wisconsin, Madison 6.

Nov. 15-16—Iowa Fruit Growers Association annual meeting and fruit show, Ames.—R. Glenn Raines, Sec'y, State House, Des Moines.

Nov. 26-28 Illinois State Horticultural Society and Illinois Fruit Council annual meeting, Abraham Lincoln Hotel, Springfield.—Harold J. Hartley, Sec'y, Carbondale.

Dec. 3-5 New Jersey State Horticultural Society annual meeting, Atlantic City.—Ernest G. Christ, Sec'y, New Brunswick.

Dec. 3-5—Kentucky State Horticultural Society 100th anniversary meeting, with American Pomological Society co-operating, Brown Hotel, Louisville.—W. W. Magill, Sec'y, U. of Kentucky, Lexington.

Dec. 4-5—Oklahoma Pecan Growers Association annual show and convention, Ardmore.—E. L. Whitehead, Sec'y-Treas., Stillwater.

Dec. 4-6—Michigan State Horticultural Society annual meeting, Civic Auditorium, Grand Rapids.—A. E. Mitchell, Asst. Sec'y, Michigan State U., East Lansing.

Dec. 6-7—Tennessee State Horticultural Society 51st annual convention, Andrew Jackson Hotel, Nashville.—A. N. Pratt, Sec'y, 403 State Office Bldg., Nashville.

Dec. 6-7—Oregon State Horticultural Society 71st annual meeting, Oregon State College, Corvallis.—C. O. Rawlings, Sec'y, Corvallis.

Dec. 7—Tennessee Pesticide Institute organization meeting, Andrew Jackson Hotel, Nashville.—A. N. Pratt, 403 State Office Bldg., Nashville.

Dec. 7-8—Idaho State Horticultural Society 62nd annual meeting, Hotel Boise, Boise.—Anton Horn, Sec'y-Treas., Boise.

Dec. 10-12—Washington State Horticultural Association 52nd annual meeting, Yakima.—John C. Snyder, Sec'y, Pullman.

Dec. 11-12—Connecticut Pomological Society 66th annual meeting, Hotel Bond, Hartford.—Sherman P. Hollister, Sec'y, Storrs.

Dec. 13-14—Kansas State Horticultural Society annual meeting, Manhattan.—W. G. Amstein, Sec'y, Manhattan.

Dec. 14-15—Western Colorado Horticultural Society annual meeting, Mesa College, Grand Junction.—Raleigh B. Flanders, Sec'y, Box 478, Grand Junction.

Dec. 14-15—Utah State Horticultural Society annual convention, Hotel Utah, Salt Lake City.—Anson Call, Sec'y, Logan.

Jan. 3-4, 1957—Maryland State Horticultural Society annual winter meeting, Hotel Alexander, Hagerstown.—A. F. Vierheller, Sec'y, College Park.

Jan. 8-9—North Carolina State Apple Growers Association, annual meeting, Hendersonville.

—Melvin H. Kolbe, U. of North Carolina, Raleigh.

Jan. 10-12—Northeastern Weed Control Conference, 11th annual meeting, Sheraton-McAlpin Hotel, New York City.—E. M. Rahn, Chairman, Public Relations Committee, Dept. of Hort., Newark, Del.

Jan. 14-16—Virginia State Horticultural Society 61st annual meeting.—John Watson, Sec'y, P. O. Box 718, Staunton.

Jan. 22-24—Indiana Horticultural Society 96th annual meeting, Severin Hotel, Indianapolis.—George A. Adrian, RR 4, Box 54-M, Indianapolis.

New York State Horticultural Society winter meetings: **Jan. 23-25**—Rochester; **Jan. 30-Feb. 1**—Kingston.—D. M. Dalrymple, Sec'y, Lockport.

Jan. 28-30—Pennsylvania State Horticultural Association annual meeting, Yorktowne Hotel, York.—John U. Ruef, Sec'y, University Park.

Jan. 28-31—United Fresh Fruit & Vegetable Association, Benjamin Franklin Hotel, Philadelphia.—Association headquarters: 777 14th St., N. W., Washington, D.C.

Feb. 6-8—Ohio State Horticultural Society annual meeting, Netherland-Plaza Hotel, Cincinnati.—C. W. Ellenwood, Sec'y, Wooster.

June 17-19—National Apple Institute annual meeting, St. Joseph, Mich.—Vivian Ray, Asst. Sec'y-Treas., 726 Jackson Pl., Washington, D.C.

WELCH

(*Continued from page* 9)

with an offer to purchase the Welch Company. A plan of purchase was agreed upon. Financing was the one big problem, as the growers themselves had to raise the money. After several months of intensive effort this could not be done and the plan was abandoned.

Discussion of plans continued between Kaplan and the National directors for the next three years. Finally a suitable contract was drawn up on June 2, 1952, whereby National members would purchase the Welch business out of proceeds of Welch sales.

The contract was essentially the same as the original one drawn up in 1945, except for one difference. The 10% of net sales previously retained by The Welch Company would now be set aside and held in reserve for eventual purchase of plants and equipment and to pay for net current assets at their value on the date of transfer of ownership, for trademarks and goodwill and for capital improvements and additions from the date the contract was signed.

In other words, the entire net earnings of The Welch Company from 1952 to 1956 were to go to the National Grape Co-operative in payment for grapes to enable the growers to purchase the Welch business.

The mortgage debt existing on the acquisition date, September 1, will be reduced by continued application of an amount equal to 10% of annual net sales.

So as of September 1, 1956, some 4600 Concord grape growers became owners of the gigantic Welch Grape Juice Company, processor of about half the Concord grapes in the nation. They now own a business with a net sales volume of some $37 million a year. THE END.

Two-year-old block of Seibel 1000, a hardy red French hybrid, in a vineyard of the Taylor Wine Company at Hammondsport, N.Y. This variety has been most widely tested in the U.S.

VINES . . . *Cast upon the Waters*

T. V. Munson's gift of wild grape vines 75 years ago to save the French grape industry is returning to America in the form of exciting new French hybrids

By GUY TRAIL

THE French hybrid grapes are exciting new varieties that promise a mild revolution in the American grape industry.

Imagine the grapes of the milder climates of Europe growing in all parts of the United States! We do grow them now in the subtropical valleys of California and Arizona, but elsewhere growers have had to be content with selections of our native American grapes.

The new hybrids are really French-American, for they were obtained by crossing the French grapes with American varieties and species that contain no foxy aroma. Their American parentage gave them hardiness and vigor; so much, in fact, that they are even being grown in Canada. Some varieties, such as Seibel 1000, have withstood temperatures of —35° F. in North Dakota.

A number of our state experiment stations are testing and selecting varieties among the French hybrids to find those best-suited to their area. A few nurseries and some individual growers are specializing in propagating the French hybrids.

Coming from a country renowned for its wine, it is natural that wine

NO SAGGING WIRES IN THIS VINEYARD

Photo by John Staby

Old railroad ties—free for the hauling—were used as posts in the vineyards of Carveth Farms, Lewiston, N.Y., managed by Victor R. Burrows. The photo shows workers stretching wire on the posts. Truck at left serves to anchor the pulleys during wire-stretching process. Ties are about 8½ feet long and are set 2½ feet into the ground. Holes must be dug by hand since the farm's post hole digger cannot dig holes big enough for the ties. A rock about 2 feet square is placed a foot underground on the inner side of the post to act as a brace. Ties are set on an angle, for added weight to keep the wires taut.

A tie is placed at each end of the row, and two steel posts alternate with one cedar post down the row. Delaware grapes spaced 7½ feet apart in rows 10 feet apart are trained to the Kniffin system on a three-wire trellis for high production. Delaware grows a smaller vine than many varieties. The first wire is 2 feet above-ground, the other two wires are spaced 21 inches apart. Cost of the wire was $12 per 18,000 feet.

types predominate. Even the large-clustered table varieties make fine wine. Many eastern wineries are growing the French hybrids on small acreages as additions to Delaware and Catawba.

The French hybrids do not possess the foxy aroma of the Concord, so are not desired by grape juice processors. However, they make a delightful, noncloying juice that is very pleasing to many tastes. The color may vary from white to a very deep red, depending on the variety.

The French hybrids vary in vine and fruit characters. Generally speaking, they are vigorous, hardy, productive, resistant to diseases, and precocious. Their fruit varies in color, size, and shape of cluster, size and shape of berry, flesh characteristics, flavor, and time of ripening. Their sugar content is similar to our American varieties, but their acidity averages higher.

Gift to the French

The story of French hybrids is a working example of mutual good will between the United States and France. About 75 years ago the French discovered that the best way to preserve their vineyards from the ravages of the American grape-root louse, phylloxera, was either to graft their vines onto American roots or to cross their varieties with American varieties and obtain "direct producers"—vines that produce satisfactory grapes and yet survive when not grafted. We co-operated by rushing some wild grape vines to France. It is the improved varieties developed from these vines that are now coming back across the ocean.

Those vines were the gift of an American botanist, T. V. Munson, who has faded into undeserved obscurity. He was called a "vine crank" by his neighbors at Denison, Tex.

The wild grapes of the botanist's expansive region had one admirable quality that was at once discernible: they were rugged. They tolerated searing summer heat and drought and sub-zero winter blizzards. Rainfall ranged from 20 to 100 inches annually. Fungus diseases that attack grapes were rampant in the humid growing seasons.

But even more significant, the black limestone soils were heavily infested with the deadly root louse, phylloxera. Only the fittest survived in that violent environment. Munson was quick to grasp the obvious potentialities of the phylloxera-resistant wild vines.

The grateful French government made Munson a chevalier in the Legion of Honor and later an honorary member of their National Society of Agriculture. THE END.

STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF

AMERICAN FRUIT GROWER, published monthly at Willoughby, Ohio, for October 1, 1956.

1. The names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, American Fruit Grower Publishing Company, Willoughby, Ohio; Editor, R. T. Meister, Willoughby, Ohio; Managing Editor, None; Business Manager, Edward L. Meister, Willoughby, Ohio.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

American Fruit Grower Publishing Company, Willoughby, Ohio; E. G. K. Meister, Willoughby, Ohio; Elsie K. Meister, Willoughby, Ohio; Edward L. Meister, Willoughby, Ohio; R. T. Meister, Willoughby, Ohio.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

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EDWARD L. MEISTER,
Business Manager

Sworn to and subscribed before me this 11th day of September, 1956.
(Seal) E. P. JEANGUENAT, Notary Public.
(My commission expires Sept. 17, 1956)

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NEW IDEAS

(*Continued from page* 11)

economically. In Michigan tests Dr. R. F. Carlson reports that an application of 2 pounds of CMU per acre, applied only to the row, will keep weeds out all summer.

An older chemical control method is the use of an emulsion consisting of 10 gallons of aromatic oil or diesel fuel oil and 2 pints of 55% Dinitro Secondary Butyl Phenol to 100 gallons of water. About 50 gallons of the mixture should be applied per acre, covering a 24-inch strip beneath the vines.

Three applications are sometimes needed. The first goes on in early May when weeds get about 6 inches high, the second in late May, when weed growth is again about 6 inches, and the third around mid-June, as the third flush of growth reaches 6 inches.

Another factor in high grape yields has been the switch from the more caustic Bordeaux mixture to milder fungicides in disease control, and to more effective insecticides.

Rudell usually applies five sprays. The first is with ferbam when shoots are from 4 to 6 inches long. The second, also ferbam, goes on just before bloom. These two are primarily for black rot control. The third is applied just after fruits set and includes DDT for berry moth and leaf hopper control. The fourth, with the same mixture, goes on just when berries touch. In the fifth spray, which comes 10 days later, fixed copper replaces the ferbam for control of downy mildew.

In a few New York areas where the berry moth is no problem, two sprays usually suffice to control black rot. Ed Beers puts on a ferbam spray just after bloom, then 10 days later makes an application of fixed copper and DDT for mildew and leaf hopper control. Don Wickham follows about the same schedule, only he is using captan in place of ferbam on part of his vineyard.

This discussion has been confined to ways of improving the yield of grapes. More could be said about the same practices in relation to improving grape quality. Growers must strive for high quality as well as high yields and must balance their cultural methods to achieve this. THE END.

PEACH ANNUAL

THE Annual of the National Peach Council, containing the proceedings of the 1956 convention at Cairo, Ill., has just been published.

Containing over 25 articles on peach production and marketing, it is an invaluable aid to peach growers. Now being distributed to peach growers in all the producing areas of the United States and Canada, it is available in limited numbers from M. J. Dorsey, secretary-treasurer, 1502 S. Lincoln, Urbana, Ill.

TRELLISES

(*Continued from page* 13)

treated posts are still in the vineyards now owned by Kermit Washburn.

About 10 years ago the first cold soak post treating demonstration was held at the Roy Mosier vineyard. Locally-cut red oak posts were treated with a solution consisting of 1 gallon of a 20% pentachlorophenol concentrate plus 4 gallons of light fuel oil. The normal life expectancy of these posts has already been tripled and they are still sound.

White cedar posts with a high percentage of sap wood have doubled their normal life and look as though they will last another five years.

Trellis height in Michigan has ranged from 4 feet where the grower used old broken post from the lane fence to about 5 feet where uniform 7-foot line post is purchased. Experiments in recent years have proved that a high trellis vineyard can produce more grapes by getting maximum use of the limited sunlight in this Great Lakes area. The rather general change from the Four-arm Kniffin to the Umbrella Kniffin system of training also requires a high trellis and wide spacing (30 inches) between wires.

Growers are attempting to carry out these known improvements and still avoid excessive wind damage from a too high trellis. Convenience of pruning and harvest is also a factor.

The trend in southwestern Michigan is toward a 5½-foot trellis with 30 to 36 inches between wires. Planting distances will likely stay at 10 feet between rows but distances between plants in the row will probably drop from 8 to 7 feet. THE END.

"DEAD MAN" ANCHOR

Here is one of the best ways to anchor end posts in vineyards. Secure a large iron rod with eye in a "dead man" or block of concrete. Plant the concrete in the ground next to the post, with the eye of the rod aboveground. Run a wire from the top of the post to the eye to serve as a brace. This method is used extensively in the Chautauqua-Erie grape belt.—E. S. Banta.

Two promising new varieties of seedless grapes for the East: Interlaken Seedless (left) and Romulus Seedless. Both are white grapes from the cross Ontario x Thompson Seedless.

Seedless Grapes

FOR THE EAST

By RICHARD WELLINGTON

New York State Agricultural Experiment Station

THERE is a keen interest in seedless grapes, not only by the lovers of fresh fruit but by the processors.

The European varieties have been used extensively in the New York station's project to breed hardy seedless grapes. The leader of this project for many years was Dr. A. B. Stout, of the New York Botanical Gardens.

No success was made in the breeding of seedless grapes until Dr. Stout started to use the European seedless varieties as the male parent. The Corinth varieties behaved like the Concord Seedless, that is, they gave no seedless progeny. Thompson Seedless, Sultanina Rose, and Black Monukka produced a few seedless types, even in the first generation.

The first promising seedless grape was named Stout Seedless in honor of Dr. Stout. Although it is productive and produces good-quality white grapes, its vine is too tender for New York, and laying down and covering the vines in the late fall and uncovering them in the spring is too expensive in labor costs.

The seedless seedlings obtained by crossing Ontario, an early, hardy white grape produced by the New York station, with Thompson Seedless have been hardier and more promising. Selections in this cross that have been named are Interlaken Seedless, Himrod Seedless, and Romulus Seedless. They all produce white grapes, as both parents bear white fruits.

The first two are very early in ripening and excellent in quality. To date their productiveness is rated fair, but their fine flavor entitles them to extensive trial. The clusters of Himrod are long and slender and sometimes loose.

Romulus Seedless ripens in midseason, about two to three weeks after Interlaken Seedless. Its vines are vigorous and very productive. Its clusters are large and compact, and its berries are small, yellow, sweet, free from foxiness, and good quality. This variety, when better known, will probably be extensively planted.

New York Seedless 15302, a sister seedling, has extremely large, well-filled clusters, and its berries are medium in size and good in quality. Its seeds are somewhat noticeable but by no means objectionable. As its fruit ripens late, like Catawba, it requires a favorable location. It is now being introduced for trial by the New York State Fruit Testing Association.

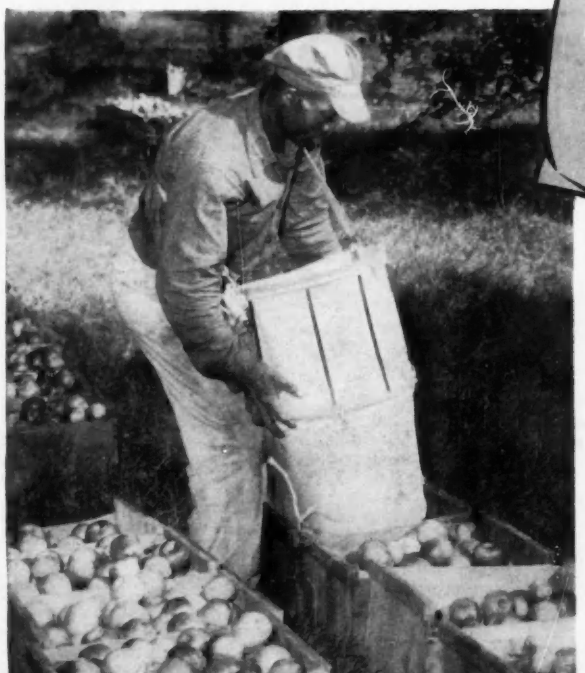
CATALOG OF NEW FRUITS

Like to test-plant the new varieties? Write to the New York State Fruit Testing Co-operative Association, Geneva, N.Y., for the 1956-57 edition of "Catalog of New Fruits." Most of the varieties listed were originated at the New York State Agricultural Experiment Station.

Over 300 seedless grapes have been produced by the New York station and several promising white and black ones may be introduced before long for further testing by the fruit testing association. THE END.

After the harvest

FEED YOUR FRUIT



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